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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/638,075	08/11/2000	Hiroji Hanawa	4609 USA/ETCH/DICP	1010

32588 7590 08/07/2002

APPLIED MATERIALS, INC.
2881 SCOTT BLVD. M/S 2061
SANTA CLARA, CA 95050

EXAMINER

MCDONALD, RODNEY GLENN

ART UNIT	PAPER NUMBER
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1753

DATE MAILED: 08/07/2002

14

Please find below and/or attached an Office communication concerning this application or proceeding.

AS-14

Office Action Summary

Application No.
09/638,075

Applicant(s)
Hanawa et al.

Examiner
Rodney McDonald

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on May 20, 2002
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-24, 27, 28, and 30-37 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-24, 27, 28, and 30-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 8-10 6) ☐ Other:

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DETAILED ACTION

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321© may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 2-24, 27, 28 and 30-37 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-31 of U.S. Pat. 6,348,126 in view of Smith et al. (U.S. Pat. 4,431,898) and Anderson (U.S. Pat. 3,291,715).

U.S. Pat. 6,348,126 teach the plasma reactor with the hollow conduit required by the claims.

The differences not discussed is that the tube being a metal is not discussed, dividing the tube is not discussed, a coil winding between the conduit and the chamber is not discussed and wherein the winding has an outer diameter less than an inner diameter of the conduit is not discussed.

Smith et al. discussed above and teach the tube being metal and dividing the tube. (See Smith et al. discussed above)

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The motivation for utilizing a metal chamber with a dielectric break is that it allows for preventing induced current flow from forming in the plasma chamber. (See Smith et al. Column 9 lines 12-13)

Anderson is discussed above and teach a coil winding between the conduit and the chamber and wherein the winding has an outer diameter less than an inner diameter of the conduit. (See Anderson discussed above)

The motivation for providing a coil antenna between the conduit and the chamber with the winding having an outer diameter than an inner diameter of the conduit is that it allows for reduction in temperature. (See Anderson discussed above Column 2 lines 10-12)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified U.S. Pat. 6,348,126 by utilizing a metal chamber with a dielectric break as taught by Smith et al. and to have provided a coil antenna between the conduit and the chamber with the winding having an outer diameter than an inner diameter of the conduit as taught by Anderson because it allows for preventing induced current flow from forming in the plasma chamber and for reduction in temperature.

This is a provisional obviousness-type double patenting rejection.

3. Claims 2-24, 27, 28 and 30-37 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-9 of 09/637,174 in view of Smith et al. (U.S. Pat. 4,431,898) and Anderson (U.S. Pat. 3,291,715).

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Application No. 09/637,174 teach the plasma reactor with the hollow conduit required by the claims.

The differences not discussed is that the tube being a metal is not discussed, dividing the tube is not discussed, a coil winding between the conduit and the chamber is not discussed and wherein the winding has an outer diameter less than an inner diameter of the conduit is not discussed.

Smith et al. discussed above and teach the tube being metal and dividing the tube. (See Smith et al. discussed above)

The motivation for utilizing a metal chamber with a dielectric break is that it allows for preventing induced current flow from forming in the plasma chamber. (See Smith et al. Column 9 lines 12-13)

Anderson is discussed above and teach a coil winding between the conduit and the chamber and wherein the winding has an outer diameter less than an inner diameter of the conduit. (See Anderson discussed above)

The motivation for providing a coil antenna between the conduit and the chamber with the winding having an outer diameter than an inner diameter of the conduit is that it allows for reduction in temperature. (See Anderson discussed above Column 2 lines 10-12)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Application No. 09/637,174 by utilizing a metal chamber with a dielectric break as taught by Smith et al. and to have provided a coil antenna between the

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conduit and the chamber with the winding having an outer diameter than an inner diameter of the conduit as taught by Anderson because it allows for preventing induced current flow from forming in the plasma chamber and for reduction in temperature.

This is a provisional obviousness-type double patenting rejection.

4. Claims 2-24, 27, 28 and 30-37 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-15 of 09/636,700 in view of Smith et al. (U.S. Pat. 4,431,898) and Anderson (U.S. Pat. 3,291,715).

Application No. 09/636,700 teach the plasma reactor with the hollow conduit required by the claims.

The differences not discussed is that the tube being a metal is not discussed, dividing the tube is not discussed, a coil winding between the conduit and the chamber is not discussed and wherein the winding has an outer diameter less than an inner diameter of the conduit is not discussed.

Smith et al. discussed above and teach the tube being metal and dividing the tube. (See Smith et al. discussed above)

The motivation for utilizing a metal chamber with a dielectric break is that it allows for preventing induced current flow from forming in the plasma chamber. (See Smith et al. Column 9 lines 12-13)

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Anderson is discussed above and teach a coil winding between the conduit and the chamber and wherein the winding has an outer diameter less than an inner diameter of the conduit. (See Anderson discussed above)

The motivation for providing a coil antenna between the conduit and the chamber with the winding having an outer diameter than an inner diameter of the conduit is that it allows for reduction in temperature. (See Anderson discussed above Column 2 lines 10-12)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Application No. 09/636,700 by utilizing a metal chamber with a dielectric break as taught by Smith et al. and to have provided a coil antenna between the conduit and the chamber with the winding having an outer diameter than an inner diameter of the conduit as taught by Anderson because it allows for preventing induced current flow from forming in the plasma chamber and for reduction in temperature.

This is a provisional obviousness-type double patenting rejection.

5. Claims 2-24, 27, 28 and 30-37 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-32 of 09/636,435 in view of Smith et al. (U.S. Pat. 4,431,898) and Anderson (U.S. Pat. 3,291,715).

Application No. 09/636,435 teach the plasma reactor with the hollow conduit required by the claims.

The differences not discussed is that the tube being a metal is not discussed, dividing the tube is not discussed, a coil winding between the conduit and the chamber is not discussed and

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wherein the winding has an outer diameter less than an inner diameter of the conduit is not discussed.

Smith et al. discussed above and teach the tube being metal and dividing the tube. (See Smith et al. discussed above)

The motivation for utilizing a metal chamber with a dielectric break is that it allows for preventing induced current flow from forming in the plasma chamber. (See Smith et al. Column 9 lines 12-13)

Anderson is discussed above and teach a coil winding between the conduit and the chamber and wherein the winding has an outer diameter less than an inner diameter of the conduit. (See Anderson discussed above)

The motivation for providing a coil antenna between the conduit and the chamber with the winding having an outer diameter than an inner diameter of the conduit is that it allows for reduction in temperature. (See Anderson discussed above Column 2 lines 10-12)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Application No. 09/636,435 by utilizing a metal chamber with a dielectric break as taught by Smith et al. and to have provided a coil antenna between the conduit and the chamber with the winding having an outer diameter than an inner diameter of the conduit as taught by Anderson because it allows for preventing induced current flow from forming in the plasma chamber and for reduction in temperature.

This is a provisional obviousness-type double patenting rejection.

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6. Claims 2-24, 27, 28 and 30-37 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-19 of 09/636,434 in view of Smith et al. (U.S. Pat. 4,431,898) and Anderson (U.S. Pat. 3,291,715).

Application No. 09/636,434 teach the plasma reactor with the hollow conduit required by the claims.

The differences not discussed is that the tube being a metal is not discussed, dividing the tube is not discussed, a coil winding between the conduit and the chamber is not discussed and wherein the winding has an outer diameter less than an inner diameter of the conduit is not discussed.

Smith et al. discussed above and teach the tube being metal and dividing the tube. (See Smith et al. discussed above)

The motivation for utilizing a metal chamber with a dielectric break is that it allows for preventing induced current flow from forming in the plasma chamber. (See Smith et al. Column 9 lines 12-13)

Anderson is discussed above and teach a coil winding between the conduit and the chamber and wherein the winding has an outer diameter less than an inner diameter of the conduit. (See Anderson discussed above)

The motivation for providing a coil antenna between the conduit and the chamber with the winding having an outer diameter than an inner diameter of the conduit is that it allows for reduction in temperature. (See Anderson discussed above Column 2 lines 10-12)

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Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Application No. 09/636,434 by utilizing a metal chamber with a dielectric break as taught by Smith et al. and to have provided a coil antenna between the conduit and the chamber with the winding having an outer diameter than an inner diameter of the conduit as taught by Anderson because it allows for preventing induced current flow from forming in the plasma chamber and for reduction in temperature.

This is a provisional obviousness-type double patenting rejection.

Response to Arguments

7. Applicant's arguments with respect to claims are have been considered but are moot in view of the new ground(s) of rejection.

Applicant's response has been fully considered. In light of the new references provided by Applicant new rejections have been made. The Examiner awaits response to these rejections.

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8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rodney McDonald whose telephone number is 703-308-3807. The examiner can normally be reached on M-Th from 8 to 5:30. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam X. Nguyen, can be reached on (703) 308-3322. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9310.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



RODNEY G. MCDONALD
PRIMARY EXAMINER

RM

August 5, 2002